

## Claims

### I claim:

1. A deductive object-oriented data mining system in a set of digital computers performing data mining through the aid of a set of CPUs of said set of digital computers, comprising:
  - a set of input/output means for reading data and generating output;
  - a set of computer storing means for storing data and computer programs;
  - a set of deductive object-oriented learning engines being a set of executable computer programs stored in said set of computer storing means for mining source data and generating a set of prediction rules through the aid of said set of CPUs of said set of digital computers;wherein  
said set of deductive object-oriented learning engines comprising:
  - a. means for reading data from said source data through said set of input/output means;
  - b. means for selecting a set of decision-attributes and a set of data-attributes from attributes of said source data, and means for selecting a set of selected instances from instances of said source data;
  - c. means for creating a set of learning classes in said set of computer storing means, each of said set of learning classes comprising said set of data-attributes and said set of decision-attributes;
  - d. means for transferring said set of selected instances to a set of working objects in said set of learning classes;
  - e. means for assigning a set of positive decision values and a set of negative decision values in values of said set of decision-attributes, and for classifying said set of working objects into positive working objects and negative working objects;

- f. means for assigning a set of threshold conditions and accepting a set of threshold values;
  - g. means for generating a set of seeds;
  - h. means for conjunctive generation of a set of conjunctive objects;
  - i. means for counting positive count and negative count, and calculating probability of each of said set of conjunctive objects;
  - j. means for testing each of said set of conjunctive objects by said set of threshold conditions, and means for determining a set of unqualified conjunctive objects, a set of qualified conjunctive objects, and a set of resultant conjunctive objects;
  - k. means for determining a set of unqualified-generated conjunctive objects;
  - l. means for transferring said set of qualified conjunctive objects in said set of resultant-lists to a set of prediction rules; and
  - m. means for generating said set of prediction rules in said set of computer storing means.
2. The set of deductive object-oriented learning engines of claim 1 further comprises means for combining all identical working objects in said set of working objects as a single working object.
3. Each of said set of deductive object-oriented learning engines of claim 1 further comprises means for creating a set of additional attributes comprising positive count attribute, negative count attribute, and probability attribute for each of said set of learning classes.
4. Each of said set of deductive object-oriented learning engines of claim 1 wherein said means for assigning a set of threshold conditions and accepting a set of threshold values comprises means for assigning minimum sample size threshold condition and

accepting minimum sample size threshold value, and means for assigning minimum probability threshold condition and accepting minimum probability threshold value.

5. Each of said set of deductive object-oriented learning engines of claim 1 further comprises means for fuzzifying values in said set of data-attributes and said set of decision-attributes.
6. The deductive object-oriented data mining system of claim 1 wherein said set of learning classes is a set of learning relations.

09883666-061801